Amendments to the Claims:

This listing of the claims will replace all prior versions, and listings of claims in the application.

Listings of Claims:

1. (Original) A plasma processing apparatus comprising:

a plasma processing chamber having a plasma excitation electrode for exciting a plasma;

a radiofrequency generator for supplying a radiofrequency voltage to the electrode;

a radiofrequency feeder connected to the electrode; and

a matching circuit having an input terminal and an output end, wherein the input terminal is connected to the radiofrequency generator and the output end is connected to an end of the radiofrequency feeder so as to achieve impedance matching between the plasma processing chamber and the radiofrequency generator,

wherein a frequency which is three times a first series resonant frequency f_0 of the plasma processing chamber which is measured at the end of the radiofrequency feeder is larger than a power frequency f_e of the radiofrequency waves.

2. (Original) A plasma processing apparatus according to claim 1, wherein a frequency of 1.3 times the first series resonant frequency f_0 is larger than a power frequency f_e.

3. (Original) A plasma processing apparatus according to claim 2, wherein the first series resonant frequency f_0 is larger than three times the power frequency f_e.

4. (Original) A plasma processing apparatus according to claim 3, wherein a series resonant frequency $f_{0'}$ which is defined by a capacitance between the plasma

excitation electrode and a counter electrode for generating the plasma in cooperation with the plasma excitation electrode is larger than three times the power frequency f_e.

5. (Original) A plasma processing apparatus according to claim 4, wherein the plasma excitation electrode and the counter electrode are of a parallel plate type, and the series resonant frequency f_0' and the power frequency f_e satisfy the relationship:

$$f_0' > \sqrt{\frac{d}{\delta}}\, f_e$$

wherein d represents the distance between the plasma excitation electrode and the counter electrode, and δ represents the sum of the distance between the plasma excitation electrode and the generated plasma and the distance between the counter electrode and the generated plasma.

6. (Original) A plasma processing apparatus according to claim 1, further comprising a resonant frequency measuring terminal for measuring the resonant frequency of the plasma processing chamber, in the vicinity of the end of the radiofrequency feeder.

7. (Original) A plasma processing apparatus according to claim 6, further comprising a switch provided between the radiofrequency feeder and the resonant frequency measuring terminal, wherein the switch electrically disconnects the end of the radiofrequency feeder from the resonant frequency measuring terminal and connects the end of the radiofrequency feeder to the output end of the matching circuit in a plasma excitation mode in which the plasma is excited, whereas the switch electrically connects the end of the radiofrequency feeder to the resonant frequency measuring terminal and disconnects the end of the radiofrequency feeder from the resonant frequency measuring terminal in a measuring mode in which the resonant frequency of the plasma processing chamber is measured.

8. (Original) A plasma processing apparatus according to claim 6, further comprising a resonant frequency measuring unit which is detachably connected to the resonant frequency measuring terminal.

9. (Original) A plasma processing apparatus according to claim 8, wherein the resonant frequency characteristics in the plasma excitation mode and the resonant frequency characteristics in the measuring mode are set to be equal to each other.

Claims 10 – 12 are cancelled.

13. (Withdrawn) A plasma processing apparatus comprising a plurality of plasma processing chamber units,

each plasma processing chamber unit comprising:

a plasma processing chamber having a plasma excitation electrode for exciting a plasma;

a radiofrequency generator for supplying a radiofrequency voltage to the plasma excitation electrode;

a radiofrequency feeder connected to the plasma excitation electrode; and

a matching circuit having an input terminal and an output terminal, wherein the input terminal is connected to the radiofrequency generator and the output terminal is connected to the radiofrequency feeder so as to achieve impedance matching between the plasma processing chamber and the radiofrequency generator,

wherein a variation, defined by $(A_{max} - A_{min})/(A_{max} + A_{min})$, between the maximum frequency A_{max} and the minimum frequency A_{min} among radiofrequency characteristics A of the plurality of plasma processing chambers has a predetermined value, wherein, in each plasma processing chamber unit, the radiofrequency characteristic A thereof is measured at a measuring point which is at the end of the corresponding radiofrequency feeder connected to the output terminal of the corresponding matching circuit.

14. (Withdrawn) A plasma processing apparatus comprising a plurality of plasma processing chamber units,

each plasma processing chamber unit comprising:

a plasma processing chamber having a plasma excitation electrode for exciting a plasma;

a radiofrequency generator for supplying a radiofrequency voltage to the plasma excitation electrode;

a radiofrequency feeder connected to the plasma excitation electrode; and

a matching circuit having an input terminal and an output terminal, wherein the input terminal is connected to the radiofrequency generator via a radiofrequency feed line, whereas the output terminal is connected to the radiofrequency feeder so as to achieve impedance matching between the plasma processing chamber and the radiofrequency generator,

wherein a variation, defined by $(A_{max} - A_{min})/(A_{max} + A_{min})$, between the maximum frequency A_{max} and the minimum frequency A_{min} among radiofrequency characteristics A of the plurality of plasma processing chambers has a predetermined value, wherein, in each plasma processing chamber unit, the radiofrequency characteristic A thereof is measured at a measuring point which is the radiofrequency-generator-side end of the radiofrequency feed line connected to the respective radiofrequency generator.

15. (Withdrawn) A plasma processing apparatus comprising a plurality of plasma processing chamber units,

each plasma processing chamber unit comprising:

a plasma processing chamber having a plasma excitation electrode for exciting a plasma;

a radiofrequency generator for supplying a radiofrequency voltage to the plasma excitation electrode;

a radiofrequency feeder connected to the plasma excitation electrode; and

a matching circuit having an input terminal and an output terminal, wherein the input terminal is connected to the radiofrequency generator via a radiofrequency feed line, whereas the output terminal is connected to the radiofrequency feeder so as to achieve impedance matching between the plasma processing chamber and the radiofrequency generator,

wherein a variation, defined by $(A_{max} - A_{min})/(A_{max} + A_{min})$, between the maximum frequency A_{max} and the minimum frequency A_{min} among radiofrequency characteristics A of the plurality of plasma processing chambers has a predetermined value, wherein, in each plasma processing chamber unit, the radiofrequency characteristic A thereof is measured at a measuring point which is the input terminal connected to the corresponding radiofrequency feed line.

16. (Withdrawn) A plasma processing apparatus according to claim 13, wherein the predetermined value is less than 0.1.

17. (Withdrawn) A plasma processing apparatus according to claim 14, wherein the predetermined value is less than 0.1.

18. (Withdrawn) A plasma processing apparatus according to claim 15, wherein the predetermined value is less than 0.1.

19. (Withdrawn) A plasma processing apparatus according to claim 13, wherein each radiofrequency characteristic A is any one of a resonant frequency f, an impedance Z_e at the frequency of the radiofrequency generator, a resistance R_e at the frequency of the radiofrequency generator, and a reactance X_e at the frequency of the radiofrequency generator.

20. (Withdrawn) A plasma processing apparatus according to claim 14, wherein each radiofrequency characteristic A is any one of a resonant frequency f, an

impedance Z_e at the frequency of the radiofrequency generator, a resistance R_e at the frequency of the radiofrequency generator, and a reactance X_e at the frequency of the radiofrequency generator.

21. (Withdrawn) A plasma processing apparatus according to claim 15, wherein each radiofrequency characteristic A is any one of a resonant frequency f, an impedance Z_e at the frequency of the radiofrequency generator, a resistance R_e at the frequency of the radiofrequency generator, and a reactance X_e at the frequency of the radiofrequency generator.

22. (Withdrawn) A plasma processing apparatus according to claim 13, wherein each radiofrequency characteristic A is a first series resonant frequency f_0.

23. (Withdrawn) A plasma processing apparatus according to claim 14, wherein each radiofrequency characteristic A is a first series resonant frequency f_0.

24. (Withdrawn) A plasma processing apparatus according to claim 15, wherein each radiofrequency characteristic A is a first series resonant frequency f_0.

25. (Withdrawn) A plasma processing apparatus according to claim 13, wherein three times the first series resonant frequency f_0 corresponding to each plasma processing chamber is larger than the frequency f_e of the radiofrequency waves.

26. (Withdrawn) A plasma processing apparatus according to claim 13, wherein each plasma processing chamber has a measuring terminal for measuring the radiofrequency characteristic A thereof at the corresponding measuring point.

27. (Withdrawn) A plasma processing apparatus according to claim 14, wherein each plasma processing chamber has a measuring terminal for measuring the radiofrequency characteristic A thereof at the corresponding measuring point.

28. (Withdrawn) A plasma processing apparatus according to claim 15, wherein each plasma processing chamber has a measuring terminal for measuring the radiofrequency characteristic A thereof at the corresponding measuring point.

29. (Withdrawn) A plasma processing apparatus according to claim 26, wherein each plasma processing chamber has a switch in the vicinity of the corresponding measuring point in which the switch electrically disconnects the measuring point from the measuring terminal and connects the radiofrequency feeder to the radiofrequency generator in a plasma excitation mode in which the plasma is excited, whereas the switch electrically connects the measuring point to the measuring terminal and disconnects the radiofrequency generator from the measuring point in a measuring mode in which the radiofrequency characteristic A of the corresponding plasma processing chamber is measured.

30. (Withdrawn) A plasma processing apparatus according to claim 27, wherein each plasma processing chamber has a switch in the vicinity of the corresponding measuring point in which the switch electrically disconnects the measuring point from the measuring terminal and connects the radiofrequency feeder to the radiofrequency generator in a plasma excitation mode in which the plasma is excited, whereas the switch electrically connects the measuring point to the measuring terminal and disconnects the radiofrequency generator from the measuring point in a measuring mode in which the radiofrequency characteristic A of the corresponding plasma processing chamber is measured.

31. (Withdrawn) A plasma processing apparatus according to claim 28, wherein each plasma processing chamber has a switch in the vicinity of the corresponding

measuring point in which the switch electrically disconnects the measuring point from the measuring terminal and connects the radiofrequency feeder to the radiofrequency generator in a plasma excitation mode in which the plasma is excited, whereas the switch electrically connects the measuring point to the measuring terminal and disconnects the radiofrequency generator from the measuring point in a measuring mode in which the radiofrequency characteristic A of the corresponding plasma processing chamber is measured.

32. (Withdrawn) A plasma processing system comprising a plurality of plasma processing apparatuses,

each plasma processing apparatus comprising:

a plasma processing chamber having a plasma excitation electrode for exciting a plasma;

a radiofrequency generator for supplying a radiofrequency voltage to the plasma excitation electrode;

a radiofrequency feeder connected to the plasma excitation electrode; and

a matching circuit having an input terminal and an output terminal, wherein the input terminal is connected to the radiofrequency generator and the output terminal is connected to the radiofrequency feeder so as to achieve impedance matching between the plasma processing chamber and the radiofrequency generator,

wherein a variation, defined by $(A_{max} - A_{min})/(A_{max} + A_{min})$, between the maximum frequency A_{max} and the minimum frequency A_{min} among radiofrequency characteristics A of the plurality of plasma processing chambers has a predetermined value, wherein, in each plasma processing chamber, the radiofrequency characteristic A thereof is measured at a measuring point which is at the end of the corresponding radiofrequency feeder connected to the output terminal of the corresponding matching circuit.

33. (Withdrawn) A plasma processing system comprising a plurality of plasma processing apparatuses,

each plasma processing apparatus comprising:

a plasma processing chamber having a plasma excitation electrode for exciting a plasma;

a radiofrequency generator for supplying a radiofrequency voltage to the plasma excitation electrode;

a radiofrequency feeder connected to the plasma excitation electrode; and

a matching circuit having an input terminal and an output terminal, wherein the input terminal is connected to the radiofrequency generator via a radiofrequency feed line, whereas the output terminal is connected to the radiofrequency feeder so as to achieve impedance matching between the plasma processing chamber and the radiofrequency generator,

wherein a variation, defined by $(A_{max} - A_{min})/(A_{max} + A_{min})$, between the maximum frequency A_{max} and the minimum frequency A_{min} among radiofrequency characteristics A of the plurality of plasma processing chambers has a predetermined value, wherein, in each plasma processing chamber, the radiofrequency characteristic A thereof is measured at a measuring point which is the radiofrequency-generator-side end of the radiofrequency feed line connected to the respective radiofrequency generator.

34. (Withdrawn) A plasma processing system comprising a plurality of plasma processing apparatuses,

each plasma processing apparatus comprising:

a plasma processing chamber having a plasma excitation electrode for exciting a plasma;

a radiofrequency generator for supplying a radiofrequency voltage to the plasma excitation electrode;

a radiofrequency feeder connected to the plasma excitation electrode; and

a matching circuit having an input terminal and an output terminal, wherein the input terminal is connected to the radiofrequency generator via a radiofrequency feed line, whereas the output terminal is connected to the radiofrequency feeder so as

to achieve impedance matching between the plasma processing chamber and the radiofrequency generator,

wherein a variation, defined by $(A_{max} - A_{min})/(A_{max} + A_{min})$, between the maximum frequency A_{max} and the minimum frequency A_{min} among radiofrequency characteristics A of the plurality of plasma processing chambers has a predetermined value, wherein, in each plasma processing chamber, the radiofrequency characteristic A thereof is measured at a measuring point which is the input terminal connected to the corresponding radiofrequency feed line.

35. (Withdrawn) A plasma processing system according to claim 32, wherein the predetermined value is less than 0.1.

36. (Withdrawn) A plasma processing system according to claim 33, wherein the predetermined value is less than 0.1.

37. (Withdrawn) A plasma processing system according to claim 34, wherein the predetermined value is less than 0.1.

38. (Withdrawn) A plasma processing system according to claim 32, wherein each radiofrequency characteristic A is any one of a resonant frequency f, an impedance Z_e at the frequency of the radiofrequency generator, a resistance R_e at the frequency of the radiofrequency generator, and a reactance X_e at the frequency of the radiofrequency generator.

39. (Withdrawn) A plasma processing system according to claim 33, wherein each radiofrequency characteristic A is any one of a resonant frequency f, an impedance Z_e at the frequency of the radiofrequency generator, a resistance R_e at the frequency of the radiofrequency generator, and a reactance X_e at the frequency of the radiofrequency generator.

40. (Withdrawn) A plasma processing system according to claim 34, wherein each radiofrequency characteristic A is any one of a resonant frequency f, an impedance Z_e at the frequency of the radiofrequency generator, a resistance R_e at the frequency of the radiofrequency generator, and a reactance X_e at the frequency of the radiofrequency generator.

41. (Withdrawn) A plasma processing system according to claim 32, wherein each radiofrequency characteristic A is a first series resonant frequency f_0.

42. (Withdrawn) A plasma processing system according to claim 33, wherein each radiofrequency characteristic A is a first series resonant frequency f_0.

43. (Withdrawn) A plasma processing system according to claim 34, wherein each radiofrequency characteristic A is a first series resonant frequency f_0.

44. (Withdrawn) A plasma processing system according to claim 32, wherein three times the first series resonant frequency f_0 corresponding to each plasma processing chamber is larger than the frequency f_e of the radiofrequency waves.

45. (Withdrawn) A plasma processing system according to claim 33, wherein each plasma processing chamber has a measuring terminal for measuring the radiofrequency characteristic A thereof at the corresponding measuring point.

46. (Withdrawn) A plasma processing system according to claim 34, wherein each plasma processing chamber has a measuring terminal for measuring the radiofrequency characteristic A thereof at the corresponding measuring point.

47. (Withdrawn) A plasma processing system according to claim 35, wherein each plasma processing chamber has a measuring terminal for measuring the radiofrequency characteristic A thereof at the corresponding measuring point.

48. (Withdrawn) A plasma processing apparatus according to claim 44, wherein each plasma processing chamber has a switch in the vicinity of the corresponding measuring point in which the switch electrically disconnects the measuring point from the measuring terminal and connects the radiofrequency feeder to the radiofrequency generator in a plasma excitation mode in which the plasma is excited, whereas the switch electrically connects the measuring point to the measuring terminal and disconnects the radiofrequency generator from the measuring point in a measuring mode in which the radiofrequency characteristic A of the corresponding plasma processing chamber is measured.

49. (Withdrawn) A plasma processing apparatus according to claim 45, wherein each plasma processing chamber has a switch in the vicinity of the corresponding measuring point in which the switch electrically disconnects the measuring point from the measuring terminal and connects the radiofrequency feeder to the radiofrequency generator in a plasma excitation mode in which the plasma is excited, whereas the switch electrically connects the measuring point to the measuring terminal and disconnects the radiofrequency generator from the measuring point in a measuring mode in which the radiofrequency characteristic A of the corresponding plasma processing chamber is measured.

50. (Withdrawn) A plasma processing apparatus according to claim 46, wherein each plasma processing chamber has a switch in the vicinity of the corresponding measuring point in which the switch electrically disconnects the measuring point from the measuring terminal and connects the radiofrequency feeder to the radiofrequency generator in a plasma excitation mode in which the plasma is excited, whereas the switch electrically connects the measuring point to the measuring terminal and

disconnects the radiofrequency generator from the measuring point in a measuring mode in which the radiofrequency characteristic A of the corresponding plasma processing chamber is measured.

Claims 51 – 62 are cancelled.